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PATENT APPLICATION IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art

Unit:

1645

Application No.: 10/647,423

Filing Date:

August 25, 2003

First Named

Inventor:

BAVYKIN, Sergei G.

Title:

DISCRIMINATION OF BACILLUS ANTHRACIS FROM CLOSELY RELATED MICROORGANISMS BY ANALYSIS OF 16S AND 23S rRNA

WITH OLIGONUCLEOTIDE

MICROCHIPS

Attorney

Docket No.:

21416/94731

Examiner

Name:

not yet assigned

Certificate Under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents,

Alexandria, VA 22313-1450

on January 6, 2003

Alice O. Martin

Registration No. 35,601

INFORMATION DISCLOSURE STATEMENT

Commissioner of Patents Alexandria, VA 22313-1450

Sir:

This statement is filed in the application identified above pursuant to 37 C.F.R. § 1.97(b)(3). No representation is intended that a complete search has been made of the prior art or that no better publications than listed on Form PTO/SB/08A are available. A copy of the publications cited are being provided herewith for review by the Examiner. The filing of this Statement shall not be construed to be an admission that the information cited in the Statement is, or is considered to be, material to patentability as defined in § 1.56(b).

U.S. Ser. No.: 10/647,423 Attorney Docket No. 21416/94731

No other fees are believed due at this time, however, please charge any deficiencies or credit any overpayments to deposit account number 12-0913 with reference to our attorney docket number (21416-94731).

Respectfully submitted,

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Alice O. Martin

Reg. No. 35,601

Dated: January 6, 2003

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BARNES & THORNBURG One North Wacker Drive Suite 4400 Chicago, Illinois 60606 (312) 357-1313

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FORM PTO/SE/08A U.S. DEPARTMENT OF COMMERCE	Complete if I	Known
(REV. 10-96) JAN 0 9 2004 S PATENT AND TRADEMARK OFFICE Substitute for for 1449A/PTO	Application Number:	10/647,423
INFORMATION DISCLOSURE	Filing Date:	August 25, 2003
STATEMENT BY APPLICANT	First Named Inventor:	BAVYKIN, Sergei G.
	Group Art Unit	1645
(Use several sheets if necessary)	Examiner Name	
Sheet 1 of 4	Attorney Docket Number:	21416-94731

A	A U.S. PATENT DOCUMENTS							
*Examiner	Cite No.	Document Number	- Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant			
Initials	1	Number-Kind Code ² (if known)	MM-DD-YYYY	Applicant of Cited Document	Passages or Relevant Figures Appear			
	A.1							
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		FOREIGN I	PATENT DOC	UMENTS		
Examiner Initials*	Cite No.1	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	A.15					
	A.16					
	A.17					
	A.18					
i	A.19					

EXAMINER	DATE CONSIDERED	

Send to: Assistant Commissioner for Patents, Washington, D.C. 20231.

^{*}EXAMINER: Initial reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considere Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check marker if English language Translation is attached.

FORM PTO/SB//88A U.S. DEPARTMENT OF COMMERCE (REV. 10-96) PATENT AND TRADEMARK OFFICE	Complete if K	nown
Substitute for form 449A/PTO	Application Number	10/647,423
INFORMATION DISCLOSURE	Filing Date	August 25, 2003
STATEMENT BY APPLICANT	First Named Inventor	BAVYKIN, Sergei G
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(Use several sheets if necessary)	Examiner Name	not yet assigned
Sheet 2 of 4	Attorney Docket Number	21416/94731

В		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	B.1	ASH, C., et al. 1992. "Comparative analysis of 23S ribosomal RNA gene sequences of <i>Bacillus anthracis</i> and emetic <i>Bacillus cereus</i> determined by PCR-directsequencing." FEMS Microbiol. Lett. 94:75-80.	
	B.2	ASH, C., et al. 1991. "Comparative analysis of <i>Bacillus anthracis</i> , <i>Bacillus cereus</i> , and related species on the basis of reverse transcriptase sequencing of 16S rRNA." Int. J. Syst. Bacteriol. 41:343-346.	
	B.3	ASH, C., et al. 1991. "Phylogenetic heterogeneity of the genus Bacillus revealed by comparative analysis of small-subunit-ribosomal RNA sequences." Lett. Appl. Microbiol. 3:202-206.	
****	B.4	BAVYKIN, S. G. et al. 2001. "Portable system for microbial sample preparation and oligonucleotide microarray analysis." Appl. Environ. Microbiol., 67: 922-928.	
	B.5	BEYER, W., et al. 1996. "A nested PCR and DNA-amplification-fingerprinting method for detection and identification of Bacillus anthracis in soil samples from former tanneries." Salisbury Medical Bulletin, Special Supplement No. 87:47-49.	
	B.6	CHEE, M., et al. 1996. "Accessing genetic information with high-density DNA arrays." Science 274: 610-614.	
	B.7	DAFFONCHIO, D., et al. 2000. "Homoduplex and heteroduplex polymorphisms of the amplified ribosomal 16S-23S internal transcribed spacers describe genetic relationships in the 'Bacillus cereus Group.'" Appl. Environ. Microbiol. 66:5460-5468.	
•	B.8	GIFFEL, M.C., et al. 1997. "Discrimination between <i>Bacillus cereus</i> and <i>Bacillus thuringiensis</i> using specific DNA probes based in variable regions of 16S rRNA. FEMS Microbiol." Lett. 146:47-51.	
	B.9	GUSCHIN, D., et al. 1997. "Manual manufacturing of oligonucleotide, DNA, and protein microchips." Anal. Biochem. 250:203-211.	
	B.10	GUSHIN, D. Y., et al. 1997. "Oligonucleotide microchips as genosensors for determinative and environmental studies in microbiology." Appl. Environ. Microbiol. 63:2397-2402.	
	B.11	HARRELL, L. J., et al. 1995. "Genetic variability, of <i>Bacillus anthracis</i> and related species." J. Clin Microbiol. 33:1847-1850.	
	B.12	HELGASON, E., et al. 2000. "Bacillus anthracis, Bacillus cereus, and Bacillus thuringiensis-one species on the basis of genetic evidence." Appl. Environ. Microbiol. 66:2627-2630.	
EXAMINER	T	DATE CONSIDERED	1

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(REV. 10-96) JAN 0 9 2004 55 PATENT AND TRADEMARK OFFICE Substitute for 1449A/PTO	Application Number	10/647,423
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Sheet 3 of 4	Attorney Docket Number	21416/94731

C		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	No. published.		T ²
	C.1	HENDERSON, I. 1996. "Fingerprinting <i>Bacillus anthracis</i> strains." Salisbury Medical Bulletin, Special Supplement No. 87:55-58.	
	C.2	HENDERSON, I., et al. 1994. "Differentiation of Bacillus anthracis from other Bacillus cereus group bacteria with the PCR." Int. J. Syst. Bacteriol. 44:99-105.	<u>-</u>
	C.3	HENDERSON, I., et al. 1995. "Differentiation of <i>Bacillus anthracis</i> and other <i>Bacillus cereus</i> group bacteria using IS231-derived sequences." FEMS Microbiol. Lett. 128:113-118.	
	C.4	HUTSON, R. A., et al. 1993. "The development and assessment of DNA and oligonucleotide probes for the specific detection of <i>Bacillus anthracis</i> ." J. Appl. Bacteriol. 75:463-472.	
•	C.5	JACKSON, P. J., et al. 1999. "Genetic comparison of <i>Bacillus anthracis</i> and its close relatives using amplified fragment length polymorphism and polymerase chain reaction analysis." J. Appl. Microbiol. 87:263-269.	
Ž	C.6	KIEM, P., et al. 1997. "Molecular evolution and diversity in <i>Bacillus anthracis</i> as detected by amplified fragment length polymorphism markers." J. Bacteriol. 179:818-824.	
	C.7	LONGCHAMP, P., et al. 1999. "Molecular recognition specificity of Bacillus anthracis spore antibodies." J. Appl. Microbiol. 87:246-249.	
	C.8	PATRA, G., et al. 1996. "DNA fingerprinting of <i>Bacillus anthracis</i> strains." Salisbury Medical Bulletin, Special Supplement No. 87:59.	
	C.9	PATRA, G., et al. 1996. "Isolation of a specific chromosomic DNA sequence of <i>Bacillus anthracis</i> and its possible use in diagnosis." EMS Immunol. Med. Microbiol. 15:223-231.	
	C.10	PRIEST, F. G., et al. 1994. "Characterization of <i>Bacillus thuringiensis</i> and related bacteria by ribosomal RNA gene restriction fragment length polymorphisms." Microbiology 140:1015-1022.	
	C.11	PROUDNIKOV, D., et al. 1998. "Immobilization of DNA in polyacrylamide gel for the manufacture of DNA and DNA-oligonucleotide microchips." Anal. Biochem. 259:34-41.	
	C.12	RAMISSE, V., et al. 1996. "Identification and characterization of <i>Bacillus anthracis</i> by multiplex PCR analysis of sequences on plasmids pX01 and pX02 and chromosomal DNA." FEMS Microbiol. Lett. 145:9-16.	
		DATE CONSIDERED	

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D		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T^2
	D.1	RYZHOV, V., et al. 2000. "Rapid characterization of spores of <i>Bacillus cereus</i> group bacteria by matrix-assisted laser desorption-ionization time-of-flight mass spectrometry." Appl Environ. Microbiol. 66:3828-3834.	
	D.2	SHANGKUAN, YH., ET AL. 2000. "Comparison of PCR-RFLP, ribotyping and ERIC-PCR for typing <i>Bacillus anthracis</i> and <i>Bacillus cereus</i> strains. J. Appl. Microbiol. 89:452-462.	
	D.3	STRIZHKOV, B. N., et al. 2000. "PCR amplification on a microarray of gel-immobilized oligonucleotides: detection of bacterial toxin- and drug-resistant genes and their mutations." BioTechniques 29:844-857.	
•	D.4	WUNSCHEL, D., et al. 1994. "Discrimination among the <i>Bacillus cereus</i> group, in comparison to B.subtilis, by structural carbohydrate profiles and ribosomal RNA spaser region PCR." Syst. Appl. Microbiol. 17:625-635.	
	D.5	YERSHOV, G., et al. 1996. "DNA analysis and diagnostics on oligonucleotide microchips." Proc. Natl. Acad. Sci. USA. 93:4913-4918.	
	D.6	ZLATANOVA, J., et al. 2001. "Gel immobilized microarrays of nucleic acids and proteins." In J. B. Rampal (ed.), Methods in Molecular Biology: DNA Arrays, Methods, and Protocols, in press, Human Press, Inc., Totowa, NJ.	
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